

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Revision of Part 15 of the Commission's)	
Rules to Permit Unlicensed National)	ET Docket No. 13-49
Information Infrastructure (U-NII) Devices)	
in the 5 GHz Band)	

To: The Commission

COMMENTS OF FIRST STEP INTERNET, LLC

First Step Internet, LLC (“FSI”), pursuant to Sections 1.415 and 1.419 of the rules of the Federal Communications Commission (“FCC”), hereby submits Comments in response to the Notice of Proposed Rulemaking seeking comment on proposed amendments to Part 15 of the FCC’s rules.¹ FSI is a fixed broadband service provider with coverage areas in and around northern Idaho and eastern Washington. FSI makes extensive use of Part 15 devices that operate using frequencies in the 5 GHz band, particularly with regard to long-range point-to-point systems that support data backhaul and other functions. FSI urges the Commission to avoid adopting rules affecting devices in the 5 GHz band that would strand the extensive investment that FSI has made deploying in wireless infrastructure used to provide valuable broadband services to consumers in the areas that FSI serves.

¹ *Revision of Part 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, Notice of Proposed Rulemaking, FCC 13-22, ET Docket No. 13-49 (rel. Feb. 20, 2013).

Background

FSI is a facilities-based, regional Internet Service Provider that has been providing Internet access services since 1994. FSI began offering dial-up Internet access with the idea of making Internet access available to virtually everyone in FSI's service areas. FSI enabled communities of the Inland Pacific Northwest to take advantage of the new opportunities arising in e-commerce. FSI services have evolved to include fixed broadband Internet access services to customers in central Washington and in Idaho. To help advance this effort, FSI obtained Round 1 Broadband Technology Opportunities Program funding for regional broadband network services in Latah, Clearwater, Nez Perce, Lewis and Idaho counties. FSI provides a variety of fixed terrestrial broadband services, including dial up, DSL, fiber, cable Internet and fixed wireless broadband services.

The *NPRM* proposes to amend Part 15 of the FCC's rules to make an additional 195 MHz of spectrum available in the 5350-5470 MHz and 5850-5925 MHz bands for use by Unlicensed National Information Infrastructure ("U-NII") devices. Like many other wireless Internet service providers ("WISPs"), FSI uses U-NII devices for outdoor fixed antenna installations. FSI has an extensive network of point-to-point links, and some parts of the network are used for backhauling data over unlicensed frequencies in the 5725-5825 MHz band. FSI estimates that it uses approximately 100 point-to-point paths with 5 GHz spectrum.

The *NPRM* proposes to harmonize two different sets of Part 15 rules that apply to indoor-outdoor operations of devices in the 5725-5825 MHz band.

- The existing UNII-3 rules at Section 15.407 limit the maximum conducted output power to the lesser of 1 watt or $17 \text{ dBm} + 10 \log B$, where B is the 26-dB emission bandwidth in MHz.² These rules also establish a maximum EIRP (with 6 dBi antenna)

² 47 C.F.R. §15.407(a)(3).

- of 36 dBm/ 4 watts, with a 53 dBm/200 watt limit for point-to-point operations.³ The operator is required to reduce power when the antenna gain exceeds 6 dBi, or when the antenna gain exceeds 23 dBi for point-to-point operations.⁴
- The existing rules at Section 15.247 limit the maximum transmit power to 1 watt.⁵ These rules also establish a maximum EIRP (with 6 dBi antenna) of 36 dBm/ 4 watts, but there is no maximum power limit for point-to-point operations.⁶ The operator is required to reduce power when the antenna gain exceeds 6 dBi, but there is no corresponding limit or required power reduction for point-to-point operations.⁷

The *NPRM* states that the FCC is “proposing to align the provisions for operation of digitally modulated devices in the 5.725-5.85 GHz band, now permitted under Section 15.247 of our rules, with the rules for the U-NII-3 band under Section 15.407. This will expand the U-NII-3 band by 25 megahertz and provide consistent rules across 125 megahertz of spectrum.”⁸ In addition, the *NPRM* proposes a variety of changes to the technical parameters set forth in the rules in 5 GHz bands and seeks comment on making available an additional 195 megahertz of spectrum available for U-NII use in the 5.35-5.47 GHz and the 5.85-5.925 GHz bands.

The FCC should adopt its proposal to extend the UNII-3 band by 25 MHz, but should retain the Section 15.247 technical rules

In general, FSI supports the Commission’s move to make more unlicensed spectrum available for use by operators such as WISPs. Adding 25 megahertz to the upper edge of the U-NII-3 band would advance this goal and would correspond with the 5725-5850 MHz band currently licensed under Section 15.247. The rule change would enhance the availability of spectrum capacity for FSI and others seeking to provide service, particularly in rural areas.

Given the differences in technical characteristics between the Section 15.247 and the Section 15.407 rules, limited harmonization of the covered frequencies should help spur

³ *NPRM* at Appendix C.

⁴ 47 C.F.R. §15.407(a)(3). For fixed, point-to-point UNII transmitters that employ a directional gain greater than 23 dBi, a 1 dB reduction in peak transmitter power and peak power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.

⁵ 47 C.F.R. §15.247(b)(4)(1), (3).

⁶ *NPRM* at Appendix C.

⁷ 47 C.F.R. §15.247(b)(4)(ii).

⁸ *NPRM* at ¶¶20, 27.

innovation and investment. In addition, harmonizing key provisions could help operators seeking to manage technical limits that apply to different types of equipment that, at present, operate in the same frequencies under different rules.

One proposed change proposed in the *NPRM* could cause significant harm to FSI and to its customers. FSI's long-range point-to-point backhaul systems use approximately 100 point-to-point links with highly directional antennas using power levels permitted under Section 15.247. Harmonizing the 5725-5850 MHz rules to the more restrictive power limits in Section 15.407 would make it impossible for FSI to continue operating these long-range links. Many of these long-distance links, by necessity, serve rural areas with low population densities in isolated areas. FSI has made an extensive investment in this equipment and in these communities using cost-effective deployment options to serve areas where available revenues are inadequate to support the cost of deployment and might not otherwise make service to those areas feasible.

With these considerations in mind, FSI urges the Commission to retain the Section 15.247 technical and operating rules but to apply them to point-to-point operations using the expanded 5725-5850 MHz band. Harmonizing the rules for this spectrum should not come at the expense of undermining the benefit of equipment that FSI and other WISPs have successfully deployed to rural areas that might otherwise not be served.⁹ Eliminating the Section 15.247 rules for the band as part of harmonization with Section 15.407 also would hinder the FCC's push to expand broadband availability into high-cost rural areas by modernizing universal-service

⁹ In addition, FSI supports alternative interference mitigation solutions in the band in lieu of the Dynamic Frequency Sensing ("DFS") requirements that apply to U-NII-2A and U-NII-2C bands. *NPRM* at n.6 (noting that the Commission requires U-NII devices in the U-NII-2A and U-NII-2C bands to employ DFS to protect Federal radar systems). FSI appreciates the importance of protecting incumbent federal radar systems. That said, the potential outages associated with a DFS sleep mode could prove highly disruptive to data backhaul links that may serve an entire rural community. Accordingly FSI submits that any band harmonization should consider alternatives to a DFS requirement in the expanded 5725-5850 MHz band.

programs for broadband deployment.¹⁰ Accordingly, the FCC should retain the Section 15.247 rules for the 5725-5850 MHz band in the manner described here.

Moreover, FSI supports the *NPRM*'s proposal to grandfather "U-NII devices that are already installed or in use"¹¹ provided that the proposal expressly includes equipment that is certified via Section 15.247 in addition to, and to the same extent as, equipment certified under the U-NII rules. As noted above, FSI has deployed a large number of these devices to support data backhaul. Requiring immediate replacement of these devices would be financially burdensome, and in light of the replacement cycle of existing devices and the valuable services being provided by FSI, grandfathering such devices for an indefinite period is appropriate.

Conclusion

FSI requests that the FCC adopt the proposals referenced in these Comments to retain the existing technical rules under Section 15.247 rules for the 5725-5850 MHz band for use in fixed point-to-point outdoor operations.

Respectfully submitted,

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¹⁰ See generally *Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing an Unified Intercarrier Compensation Regime; Federal-State Joint Board on Universal Service; Lifeline and Link-Up; and Universal Service Reform – Mobility Fund*, Report and Order and Further Notice of Proposed Rulemaking, WC Docket Nos. 10-90, *et al.*, FCC 11-161 (rel. Nov. 18, 2011), *pets. for review pending sub nom. In re: FCC 11-161*, No. 11-9900 (10th Cir. filed Dec. 8, 2011) ("*USF/ICC Transformation Order*").

¹¹ *NPRM* at ¶115.